AR201-12549b7

ROBUST SUMMARY
ALKYL SULFIDE CATETGORY
CAS # 68511-50-2
ECOTOXICITY ELEMENTS: ACUTE TOXICITY TO FISH

Test Substance	
CAS #	68511-50-2
Chemical Name	1-propene, 2-methyl-, sulfurized
Remarks	This substance is referred to as methyl propene derivative in the HERTG's Test Plan for Alkyl Sulfide Category. For more information on the chemical, see Section 2.0 "Chemical Description of Alkyl Sulfide Category" in HERTG's Test Plan for Alkyl Sulfide Category.
Method	
Method/Guideline followed	Test protocol followed US EPA Toxic Substances Control Act Test Guideline #797.1400 (1985), OECD Guideline for Testing of Chemicals #203, Fish Acute Toxicity Test (1984).
Test Type	WAF static renewal test
GLP (Y/N)	Y
Year (Study Performed)	1993
Species/Strain	Fathead minnow (*Pimephales promelas)*
Analytical Monitoring	Total organic carbon (TOC) measurements of initial test solutions and control (0-hour) and after one day on test (24-h) before daily renewal of fresh test solution.
Exposure Period (unit)	96 hours
Statistical methods	Statistical analysis of survival data not warranted.
Remarks field for test conditions (fill as applicable)	Test Organisms: source – Aquatic Research Organisms, Hampton, New Hampshire, age – juvenile, total length – 25 mm average (longest fish not more than twice the shortest fish), wet weight – 0.1 g average (no range reported). Loading - <0.5 g biomass/L, Pretreatment – none, fish held for a minimum of 14 days before testing. No feeding during the test. Test System: Individual WAFs were prepared for each test level and renewed daily. A measured weight of test material was added to a measured volume of dilution water (30-L) in a glass vessel and stirred for 24 hours. Stirring accomplished using a Telfon coated magnetic stir bar. Mixing speed adjusted such that a vortex formed between 30 to 50% of the distance to the bottom. Following the mixing period, the test solutions were allowed to stand for 1 hour before the water phase was removed. To avoid removing test material from the surface or bottom, a siphon was placed in the mixing vessel prior to addition of water and test substance with the lower end 1-2 inches off the bottom. The siphoned water phase (i.e., WAF) was used in the aquatic toxicity test. About 80% of the solution in each test level was renewed daily after 24, 48, and 72 hours. Two 15-L replicates per treatment, 10 fish per replicate (20 per treatment). Test vessels loosely covered to reduce entry of dust, etc.

	Dilution Water: Filtered well water collected at Hampton, New Hampshire and adjusted to the appropriate hardness of 176 mg/L as $CaCO_3$. The water was passed through activated carbon, a particle filter, and then an ultraviolet sterilizer, and then it was stored in a polyethylene tank where it was aerated. The water was characterized as moderately hard water. Alkalinity not reported. Dissolved oxygen – 7.1 to 8.7 mg/L, pH – 7.8 to 8.5, conductivity – 570 to 650 umhos/cm, temperature – 21.4 to 22.8 C. TOC levels were between 2 to 3 mg/L in the control, 3 mg/L at 100 mg/L test level, between 3 to 4 mg/L at 300 mg/L test level and 5 mg/L at 1,000 mg/L test concentration level. Test Levels: Control, 100, 300 & 1,000 mg/L WAF loading rates. Test Findings: No mortality was observed in all treatments and the control throughout the entire test and no signs of toxicity were noted in all treatments throughout 72 hours. At 96 hours, all 20 fish in the 1,000 mg/L test level were lethargic and exhibited erratic swimming, but no signs of toxicity were observed in the lower test levels and control. Calculation of LL_{50} s: Statistical analysis of survival data not warranted. Test Substance: No undissolved test material was seen on the surface of the test vessels during the entire aquatic toxicity test. Reference Substance: No
Results	Nominal concentrations: 96-h LL_{50} >1,000 mg/L. 96-h LL_0 = 300 mg/L. No mortality at 1,000 mg/L but at 96 hours all fish were lethargic and exhibited erratic swimming. TOC measurements at 1,000 mg/L were 5 mg/L compared to 2 to 3 mg/L in the control.
Remarks	Measured concentration: n/a Unit: mg/L LC50, LC0, LL50 or LL0 at 48, 72, 96 hours: LL_{50} and LL_0 reported as LC_{50} and NOEC, respectively, although test results were based on WAF loading rates. Statistical results: Statistical analysis of survival data not warranted. Other: • The TOC in dilution water at the beginning and end of the test was greater than 2 mg/L rather than <2 mg/L. It could not be verified that water samples were passed through a 0.45 micron filter prior

	to TOC analysis, that the test vessels were covered, or that the continuous temperature measurement was made in a control vessel during the study. But, these deviations did not compromise the study.
Conclusions	No mortality was observed in all treatments and the control throughout the entire test and no signs of toxicity were noted in all treatments throughout 72 hours. At 96 hours, all 20 fish in the 1,000 mg/L test level were lethargic and exhibited erratic swimming, but no signs of toxicity were observed in the lower test levels and control.
Data Quality	Reliable without restrictions
References	Chemical Manufacturers Association, HERTG Ward, T.J. (1993) Acute Toxicity of The Water Accommodated Fractions (WAFs) of CMA 613 to The Fathead Minnow, *Pimephales promelas.* T.R. Wilbury Study #9176-CMA/ESI-613.
Other	Updated: 12-21-99